

# Cricket Thermometer

A scientist recorded the chirping sounds of crickets and noticed that there appeared to be a relationship between chirping frequency and temperature. Analyze this sample data and draw your own conclusions.

Temperature (°C)	Frequency (chirps/minute)
10	42
18	91
20	92
23	121
27	130
28	133
32	154

1. Which variable will you plot on the independent axis? The dependent axis?
2. Input the data and draw a scatterplot.
3. Sketch what the graph looks like.
4. Describe what the graph means to you.
5. Determine the mathematical model (function) that describes this data. Write it in the form of  $y=mx+b$ .
6. What does the slope represent?
7. How many chirps/minute would you predict if the temperature was 25°C?
8. Would you expect to hear crickets chirping at 320 chirps/minute? Explain your reasoning.
9. Expand your viewing window until you can see where the line crosses both the x and the y axes. Explain the physical meaning of these two intersection points and discuss how reasonable each answer is.